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# Dairy Production

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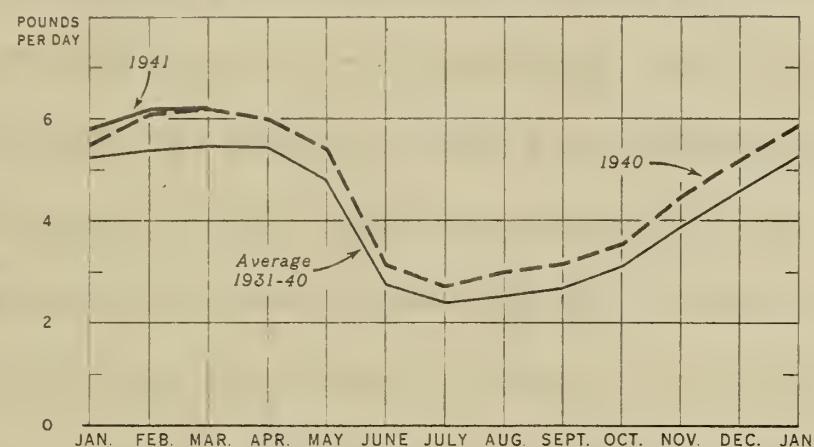
UNITED STATES DEPARTMENT OF AGRICULTURE

No. 11



MARCH 17, 1941

GRAINS AND CONCENTRATES FED PER MILK COW,  
AS REPORTED BY DAIRY CORRESPONDENTS



U. S. DEPARTMENT OF AGRICULTURE

NEG. 388 AGRICULTURAL MARKETING SERVICE

The quantity of grain and concentrates fed per milk cow has been from 12 to 15 percent above average during the winter feeding season this year. As explained on page 8, this factor has contributed to the record rate of milk flow.

## DAIRY PRODUCTION SUMMARY

During February, and probably during early March, the production of milk and dairy products continued at an unprecedented high level for the season, but there are few signs of overproduction. Reports to the Agricultural Marketing Service indicate that stocks of dairy products did not decline quite as rapidly as usual during February, but March 1 holdings are only about average as compared with production. Though prices have been low enough to permit very heavy consumption they have been high enough to encourage farmers to feed their cows better than at the same season in any of the last 10 years.

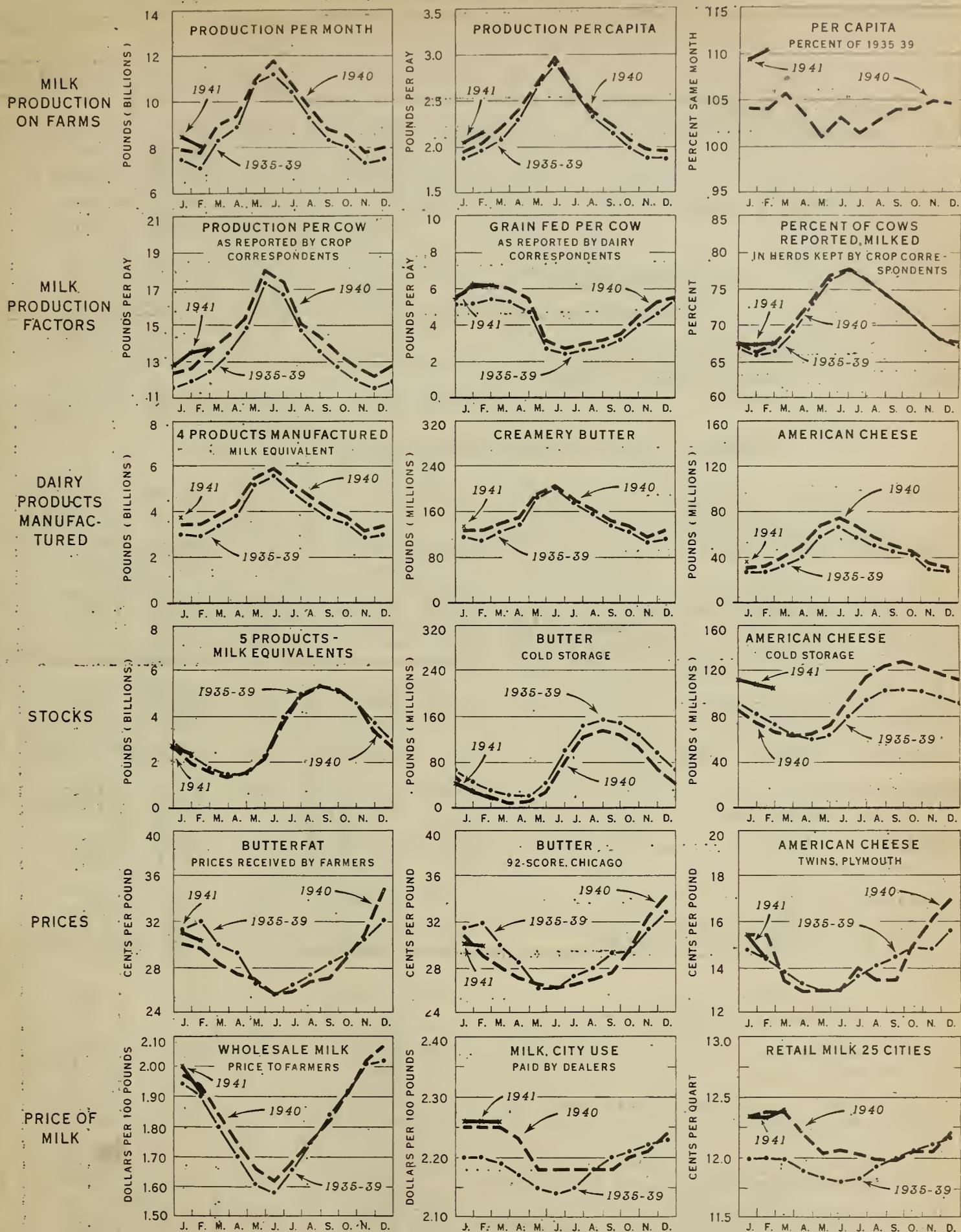
Milk production in February is estimated at a little over 8 billion pounds. Daily production (which is not complicated by leap year differences) was about 6 percent higher than in February last year. In both January and February daily production per capita was 10 percent above the 1935-39 average for the same month, and higher relative to average for the season than in any month since early 1932. In most of the principal dairy States the winter was mild and there are about 2 percent more milk cows than a year ago. Nevertheless, liberal feeding of grains and high protein concentrates is probably the principal cause of the high milk production.

With milk production in February about 12 percent above the 1935-39 average for the month, production of creamery butter was 19 percent above average, American cheese 31 percent above, and principal dairy products combined 23 percent above. Increased commercial manufactures accounted for about three-fourths of the increase in production. Compared with February of last year, a 29 day month, milk production and dairy manufactures both show increases of about 3 percent, equal to increases of about 6 percent for the same number of days.

Cold storage holdings of creamery butter on March 1 were equal to about 3 days' production. Cheese stocks were large and declining slowly. Combined stocks of all principal products were about 14 percent above the 1935-39 average for the date, high compared to holdings on January 1, but not burdensome.

Prices of most dairy products appear to be holding close to the 1935-39 averages for the same months with only small fluctuations. Prices of feedstuffs at wholesale are now about 90 percent of the 5-year average at this season.

# DAIRY PRODUCTION: GRAPHIC SUMMARY FOR THE UNITED STATES



U. S. DEPARTMENT OF AGRICULTURE

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UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

Dairy Production

March 17, 1941

SUMMARY OF DAIRY STATISTICS FOR THE UNITED STATES

			Average:		
			: 1934-38:	1939	: 1940 or 1941
			: or	: or	: Total
			: 1935-39:	1940	: or Av.
					: Prev. year
<b>MILK PRODUCTION ON FARMS</b>					
Total, per month.....	mil. lb.	Dec.	7,383	7,816	: 8,076b/ : 103.3
		Jan.	7,480	7,952b/	: 8,448b/ : 106.2
		Feb.	7,124	7,801b/	: 8,008a/ : 102.7
Per capita, daily average.....	lb.	Jan.	1.871	1.950b/	: 2.058b/ : 105.5
		Feb.	1.957	2.044b/	: 2.159a/ : 105.6
Per cow, per day.....	lb.	Jan. 1	11.59	12.43	: 12.78 : 102.8
(As reported by crop correspondents)		Feb. 1	11.97	12.65	: 13.46 : 106.4
		Mar. 1	12.51	13.62	: 13.77 : 101.1
<b>GRAIN FED PER COW</b>	lb.	Feb. 1	5.24	6.13	: 6.18c/ : 100.8
(As reported by dairy correspondents)		Mar. 1	5.37	6.18	: 6.20c/ : 100.3
<b>PRODUCTION OF MANUFACTURED DAIRY PRODUCTS</b>					
Creamery butter, monthly.....	mil. lb.	Jan.	114.0	128.2b/	: 136.4b/ : 106.4
		Feb.	109.6	127.8b/	: 130.5ad/ : 102.1
weekly.....	week ending	Feb. 27	--	--	: -- : 104.8
		Mar. 6	--	--	: -- : 106.3
American cheese.....	mil. lb.	Jan.	27.9	30.7b/	: 36.4b/ : 118.6
		Feb.	27.1	33.1	: 35.6ad/ : 107.6
Evaporated milk, case.....	mil. lb.	Dec.	105.7	139.8	: 150.9 : 107.9
		Jan.	121.7	158.9	: 171.6 : 108.0
4 products, milk equivalent.....	mil. lb.	Dec.	2,943	3,199	: 3,426 : 107.1
(Creamery butter x 21, all cheese except skim x 10, canned cond. & evap. milk x 2.2)		Jan.	3,060	3,477	: 3,759 : 108.1
		Feb.	2,965	3,522	: -- : 103.0c/
<b>STOCKS ON HAND</b>					
Butter in cold storage.....	mil. lb.	Feb. 1	45.1	29.2	: 29.7 : 101.7
(Including government holdings)		Mar. 1	30.2	18.4	: 16.5a/ : 89.7
Commercial holdings, only.....		Mar. 1	13.4	16.4	: 15.1a/ : 92.1
American cheese.....	mil. lb.	Feb. 1	81.6	75.2	: 109.8 : 146.0
(Cold storage holdings)		Mar. 1	72.2	67.0	: 105.0a/ : 156.7
Evaporated milk, case.....	mil. lb.	Jan. 1	175.1	186.1	: 187.7 : 100.9
(Manufacturers' stocks)		Feb. 1	128.4	156.3	: 189.2 : 121.0
5 products, milk equivalent.....	mil. lb.	Jan. 1	2,909	2,748	: 2,678 : 97.5
(Butter, all cheese, canned cond. & evap. milk plus cream in cold storage)		Feb. 1	2,255	1,970	: 2,374 : 120.5
		Mar. 1	1,744	1,604	: 1,988cd/ : 123.9
<b>PRICES</b>					
Butterfat, per pound .....	ct.	Jan. 15	31.4	30.0	: 31.1 : 103.7
(Prices received by farmers)		Feb. 15	32.0	29.7	: 30.5 : 102.7
Butter, wholesale, per pound.....	ct.	Feb.	31.91	29.03	: 30.07 : 103.6
(92 score, Chicago)		Mar.	29.99	28.03	: 30.25e/ : 107.9
American cheese, wholesale, per pound.....	ct.	Feb. 15	14.35	15.50	: 14.50 : 93.5
(Twins, Plymouth, Wisconsin)		Mar. 15	13.90	13.50	: 15.00d/ : 111.1
Milk, wholesale, per 100 pounds.....	dol.	Jan. 15	1.94	1.99	: 2.00 : 100.5
(All purposes, prices received by farmers)		Feb. 15	1.90	1.94	: 1.91a/ : 98.5
Milk for city distribution, per 100 pounds...	dol.	Feb.	2.20	2.25	: 2.26 : 100.4
(Prices paid by dealers, 3.5% basis)		Mar.	2.19	2.25	: 2.26 : 100.4
Milk, retail, delivered, per quart.....	ct.	Feb.	12.00	12.38	: 12.33 : 99.6
(Average, 25 markets)		Mar.	11.99	12.38	: 12.45a/ : 100.6

a/ Preliminary. b/ Preliminary revision. c/ Forecast or interpolation.  
d/ Not available when accompanying chart was prepared. e/ Price March 14.

Milk production per cow increased much less than usual during February but on March 1 it was still 8 percent higher than the 10-year average for the date and more than 1 percent above the previous high record for March 1 set in 1930 and equaled last year. All major groups of States show production per cow above average on March 1 but production was particularly high in northern and western areas where February weather was unusually mild. In most northern States from Michigan to Montana, and also in Illinois, Kansas and Colorado, reports on production per cow equaled or exceeded previous high March 1 figures. In the South, cold weather in February was unfavorable for milk production and for early pastures. Farmers in several southern States reported an unusually small proportion of their milk cows in production and milk production per cow will be below average for the season.

In the United States as a whole, milk production per cow in herds kept by crop correspondents averaged 13.77 pounds on March 1 compared with 13.62 pounds on the date last year and a 1930-39 March 1 average of 12.75 pounds. In these herds, 67.6 percent of the milk cows were reported in production on March 1. This percentage, the same as that reported a year ago, was only slightly below the record high March 1 figure of 67.8 percent in 1932, and exceeded the percentages reported March 1 in other years for which records are available.

MONTHLY MILK PRODUCTION ON FARMS, UNITED STATES  
1935-39 Average, 1940, and 1941

Month	Monthly Total			Daily Average per Capita		
	Average			Average		
	1935-39	1940 1/	1941	1935-39	1940 1/	1941
<u>Million pounds</u>						
January	7,480	7,952	8,448 1/	1.871	1.950	2.058 1/
February	7,124	7,801	8,008	1.957	2.044	2.159
March	8,342	9,006	-	2.084	2.207	-
April	8,928	9,444	-	2.304	2.390	-
May	10,719	11,076	-	2.676	2.712	-
June	11,195	11,805	-	2.886	2.985	-
July	10,443	10,865	-	2.604	2.657	-
August	9,330	9,812	-	2.325	2.398	-
September	8,338	8,880	-	2.145	2.241	-
October	7,992	8,510	-	1.989	2.077	-
November	7,303	7,845	-	1.876	1.977	-
December	7,516	8,076	-	1.868	1.968	-
Yearly Total	104,710	111,072	-	2.216	2.301	-

1/ Revised.

Heavy feeding of grain and concentrates per milk cow appears to have been an important factor in maintaining the unusually high rate of milk flow. As shown by the chart on the cover page and by data in the table on page 6, grain fed per milk cow in herds kept by dairy reporters so far during the current winter feeding period has been from 12 to 15 percent above the 10-year average rate of feeding. Milk cows in practically all sections of the country have been well fed as shown by the regional averages for February 1 on page 6. Abundant supplies of farm feed grains and commercial by-product feeds appear to have encouraged heavy feeding, even though prices of butterfat and milk have not departed greatly from their long-time average relationships to prices of feed grain and commercial feedstuffs. Looking ahead to the two remaining months of the feeding period, the rate of feeding seems likely to continue high.

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GRAIN AND CONCENTRATES, FED PER MILK COW PER DAY  
IN HERDS KEPT BY DAIRY CORRESPONDENTS

On First of Each Month, United States, 1931-41 1/

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	Jun. 1	Jul. 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1	Average	Yearly
	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.
1931	5.67	5.71	5.96	6.05	5.20	2.99	2.37	2.37	2.78	3.39	4.32	5.05	4.31	
1932	5.51	5.55	5.58	5.48	4.80	2.64	2.11	2.23	2.45	3.10	4.11	4.84	4.03	
1933	5.55	5.65	5.76	5.74	4.92	2.77	2.41	2.55	2.49	2.73	3.55	4.18	3.99	
1934	4.73	4.74	4.90	4.89	4.31	2.56	2.22	2.34	2.36	2.52	3.01	3.57	3.49	
1935	4.25	4.29	4.50	4.39	3.99	2.13	1.86	1.96	2.19	2.55	3.44	4.26	3.36	
1936	5.33	5.40	5.56	5.45	5.02	2.96	2.76	3.02	3.09	3.19	3.56	4.11	4.10	
1937	4.80	4.91	4.94	4.91	4.34	2.47	2.15	2.33	2.62	3.22	4.06	4.73	3.82	
1938	5.53	5.74	5.85	5.75	4.88	2.88	2.62	2.75	2.95	3.40	4.18	4.90	4.29	
1939	5.66	5.86	5.98	5.92	5.15	2.95	2.56	2.80	3.03	3.60	4.61	5.03	4.42	
1940	5.51	6.13	6.18	6.02	5.43	3.15	2.73	2.98	3.15	3.54	4.51	5.22	4.56	
1941	5.91	6.18	6.20											

On February 1, by Major Groups of States, 1931-41

Date	North	E. North	W. North	South	South	United	
	Atlantic	Central	Central	Atlantic	Central	Western	States
Feb. 1	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.
1931	6.6	6.1	6.4	5.6	4.6	3.5	5.71
1932	6.1	6.0	5.9	4.7	5.3	3.6	5.55
1933	5.7	6.1	6.3	5.7	5.3	3.2	5.65
1934	5.5	5.1	4.6	5.6	4.5	2.9	4.74
1935	5.5	4.4	3.3	5.7	4.9	2.9	4.29
1936	5.9	5.8	5.4	5.6	5.2	3.6	5.40
1937	5.8	4.8	4.0	6.4	5.7	3.6	4.91
1938	5.9	6.2	5.7	6.2	5.7	4.0	5.74
1939	6.0	6.0	6.1	6.4	6.1	3.8	5.86
1940	6.3	6.4	6.2	6.4	6.4	4.1	6.13
1941	6.6	6.4	6.3	6.6	6.2	4.2	6.18

1/ Based on periodic replies of about 6,000 dairy correspondents to the question "How many pounds of grain (including mill feeds and concentrates) were fed yesterday to all milk cows on your farm?" Prior to December 1935 the United States averages were based on monthly averages for all States. For more recent dates the series is partially interpolated, being based on quarterly reports (Feb. 1, May 1, Aug. 1 and Nov. 1) from all States, with intervening months interpolated, using monthly reports from 10 or more States where dairying is relatively important and December 1 reports from crop correspondents in all States. Averages for the United States represent State or interpolated regional averages combined in proportion to the numbers of milk cows on farms. The herds in the sample average about 11 milk cows per farm or double the average size of herd, but they probably represent a fair cross-section of herds which produce important quantities of milk and butterfat for sale.

## MILK PRODUCED PER MILK COW IN HERDS KEPT BY REPORTERS 1/

State	March 1, (Av.) 1930-39	March 1, 1939	March 1, 1940	March 1, 1941
	Pounds	Pounds	Pounds	Pounds
Maine	12.6	12.4	13.2	13.5
New Hampshire	14.5	13.9	14.9	13.5
Vermont	13.4	13.3	14.1	14.0
Massachusetts	17.4	17.8	17.3	17.9
Connecticut	17.0	16.1	17.2	17.1
New York	15.4	16.5	17.0	16.7
New Jersey	18.8	18.5	19.3	19.1
<u>Pennsylvania</u>	<u>16.2</u>	<u>17.0</u>	<u>16.9</u>	<u>16.9</u>
<u>North Atlantic</u>	<u>15.77</u>	<u>16.52</u>	<u>16.75</u>	<u>16.56</u>
Ohio	14.2	14.6	14.7	14.7
Indiana	12.9	13.5	13.8	13.8
Illinois	14.0	14.4	15.1	15.2
Michigan	16.3	17.0	17.0	18.0
<u>Wisconsin</u>	<u>15.9</u>	<u>16.1</u>	<u>16.8</u>	<u>17.2</u>
<u>East North Central</u>	<u>14.93</u>	<u>15.34</u>	<u>15.76</u>	<u>16.07</u>
Minnesota	16.8	17.8	18.7	18.9
Iowa	14.0	15.3	16.0	15.7
Missouri	8.5	9.0	9.2	9.1
North Dakota	11.6	12.1	14.2	14.8
South Dakota	10.9	11.8	12.7	12.0
Nebraska	13.0	14.3	13.8	13.5
<u>Kansas</u>	<u>13.3</u>	<u>14.4</u>	<u>13.4</u>	<u>14.4</u>
<u>West North Central</u>	<u>12.99</u>	<u>13.93</u>	<u>14.65</u>	<u>14.55</u>
Maryland	13.3	14.5	15.6	15.4
Virginia	9.4	10.3	10.0	10.4
West Virginia	8.7	8.6	8.2	8.4
North Carolina	9.9	10.7	10.7	10.6
South Carolina	9.3	9.9	9.6	9.8
<u>Georgia</u>	<u>8.1</u>	<u>8.8</u>	<u>8.5</u>	<u>8.6</u>
<u>South Atlantic</u>	<u>9.63</u>	<u>10.33</u>	<u>10.38</u>	<u>10.47</u>
Kentucky	9.3	9.9	9.6	9.9
Tennessee	8.3	9.2	8.6	8.9
Mississippi	6.5	6.5	5.4	5.8
Arkansas	7.2	7.7	7.0	7.7
Oklahoma	9.6	10.5	9.5	9.7
<u>Texas</u>	<u>8.6</u>	<u>8.1</u>	<u>7.8</u>	<u>7.9</u>
<u>South Central</u>	<u>8.22</u>	<u>8.62</u>	<u>8.08</u>	<u>8.46</u>
Montana	11.6	12.6	12.2	13.5
Idaho	15.7	15.8	16.4	16.7
Wyoming	11.2	11.8	12.6	12.7
Colorado	12.8	14.3	13.7	14.6
Washington	15.3	16.2	16.2	16.7
Oregon	13.8	14.2	14.7	15.2
<u>California</u>	<u>17.8</u>	<u>18.3</u>	<u>17.3</u>	<u>18.4</u>
<u>Western</u>	<u>14.18</u>	<u>15.20</u>	<u>15.19</u>	<u>15.88</u>
<u>United States</u>	<u>12.75</u>	<u>13.40</u>	<u>13.62</u>	<u>13.77</u>

1/ Averages represent the reported daily milk production of herds kept by reporters divided by the total number of milk cows (in milk or dry) in these herds. Figures for New England States are based on combined returns from crop and special dairy reporters and are weighted by counties. Figures for other States, regions, and U. S. are based on returns from crop reporters only. The regional averages are based in part on records of less important dairy States not shown separately, as follows: North Atlantic, Rhode Island; South Atlantic, Delaware and Florida; South Central, Alabama and Louisiana; Western, New Mexico, Arizona, Utah and Nevada.

## GRAIN AND CONCENTRATES FED TO MILK COWS

The quantity of grain and concentrates fed to milk cows is constantly adjusted to price conditions, supplies on hand, and the quantity of feed that cows are able to secure from pastures. The adjustment of feeding practices to prices and the response of milk production to changes in the rate of feeding have tended to keep annual milk production closely adjusted to normal requirements, except during the feed shortages that followed the droughts.

To obtain information on rates of feeding, dairy correspondents are asked to report how much they are feeding. These reports are summarized on page 6. Corresponding reports from crop reporters on February 1 and December 1 show similar year-to-year changes but indicate relatively heavier feeding when feed grains were cheap (as in February of 1932 and 1933). Lighter feeding was noted after the droughts of 1934 and 1936 when feed grains were scarce and high in price, compared with the by-product feeds that are more extensively fed by dairy correspondents and others keeping larger herds.

The rate of feeding and the condition of pastures seem to account for most of the annual variation in production per cow during the last 10 years. The record is too short to measure the separate effects of the various interrelated factors that have affected production, but variation in the average quality of the ration appears to have been important, as explained on page 6 of the January issue. Thus, in 1932, 1933, and to some extent in other years when feed grain was very cheap, farmers fed more than the usual quantity of grain and concentrates per cow, but they also increased the percentage of unground feed grain in the rations so the heavier feeding did not have quite the usual effect on milk production.

The following table shows the extent to which annual variations in the estimated milk production per cow in the United States might be explained by the assumptions that milk production per cow tends to be 1 percent above or below average for each 3 percent that the average yearly rate of feeding reported by dairy correspondents is above or below average and also for each 5 percent (of normal) that the seasonal average condition of dairy pastures is above or below the average of 70.5. These are merely rough approximations of average relations but are convenient for rough calculations.

MILK PER COW, FEEDING, AND PASTURES, U.S., 1931-40

Year	Milk Production per cow	Grain Fed	Condition of pastures	Combined effect
	Pounds per year	: Pct. above or below average	: Pct. of average	: dairy pastures
1931	4,461	+ 2.7	106.7	70.1 + 2.1
1932	4,307	- 0.9	99.8	71.2 0
1933	4,180	- 3.8	98.8	65.6 - 0.5
1934	4,029	- 7.3	86.4	53.2 - 7.9
1935	4,178	- 3.8	83.2	79.5 - 3.8
1936	4,301	- 1.0	101.5	58.6 - 1.9
1937	4,350	+ 0.1	94.6	75.0 - 0.9
1938	4,522	+ 4.1	106.2	82.9 + 4.6
1939	4,538	+ 4.5	109.4	71.2 + 3.2
1940	4,575	+ 5.3	112.9	77.2 + 5.6